

3.6 Yellow

3.6.1 Iron Oxide Yellow

Iron oxide yellow FeOOH (**Y01**) is a brownish yellow similar to iron oxide red. It appears tan and has a high NIR reflectance (0.70) when applied over a white background.

3.6.2 Cadmium Yellow

Cadmium yellow (**Y02**) is similar to cadmium orange. It appears bright yellow and has very high NIR reflectance (0.87) over white.

3.6.3 Chrome Yellow

Chrome yellow PbCrO_4 (**Y03**) is optically similar to cadmium yellow but exhibits a more gradual reduction in absorptance. It appears bright yellow and achieves a high NIR reflectance (0.83) over white. In some applications, the presence of lead and/or the Cr(VI) ion impose limitations.

3.6.4 Chrome Titanate Yellow

Chrome titanate yellow (**Y04 - Y07**) is similar to chrome yellow, but scatters more strongly in the NIR. Its scattering coefficient can exceed 100 mm^{-1} in the short NIR, suggesting that this pigment might be used in place of titanium white to provide a background of high NIR reflectance. Over a black background, chrome titanate yellow appears brown to green and has moderate to high NIR reflectance (0.26 - 0.62). Over white, it appears orange to yellow and has very high NIR reflectance (0.80 - 0.86). Y07 over black produces a medium brown with NIR reflectance 0.62.

The curves for Y04 and Y05 illustrate how the backscattering coefficient S varies with particle size (manufacturer data). For smaller particles, the decrease in S with increasing wavelength is more dramatic.

3.6.5 Nickel Titanate Yellow

Nickel titanate yellow (**Y08 - Y11**) is similar to chrome titanate yellow. Note that these compounds usually also contain antimony in their formulation. Over white, it appears a muted yellow and yields very high NIR reflectance (0.77-0.87); over black, it appears yellowish green and achieves moderate to high NIR reflectance (0.22 - 0.64). Y11 is a particularly good candidate to use over black.

3.6.6 Strontium Chromate Yellow + Titanium Dioxide

Strontium chromate yellow (solids mass fraction 11%) mixed with titanium dioxide (solids mass fraction 9%) in a paint primer (**Y12**) appears greenish brown over a black background, and pale yellow over a white background. It has very low absorption (order 1 mm^{-1}) and strong scattering (order 100 mm^{-1}) at 1000 nm, giving it a good NIR reflectance over black (0.38) and a very high NIR reflectance over white (0.86).

3.6.7 Hansa Yellow, Diarylide Yellow

Hansa yellow (**Y13**) and diarylide yellow (**Y14**) are weakly scattering, dyelike organic pigments with high absorption below 500 nm and very weak absorption elsewhere. Over white, they appear bright yellow and orange-yellow, respectively, and yield very high NIR reflectance (0.87).

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